

WHAT IS CLAIMED IS:

1. In a unit including (i) a material hopper having a neck, and (ii) equipment to which the material hopper dispenses material through the neck, an improvement to the unit comprising a removable assembly enabling removability of the hopper from the equipment to which the material hopper dispenses material, the removable assembly incorporating a sealing device to seal off the neck of the hopper during hopper removal from the equipment, the sealing device also to regulate material flow rate from the hopper.
2. The improved unit of Claim 1, the sealing device being in a horizontal orientation to seal the neck of the hopper.
3. The improved unit of Claim 1, the sealing device being in an inclined orientation off the horizontal to seal the neck of the hopper.
4. The improved unit of Claim 2, the sealing device being a slide gate.
5. The improved unit of Claim 4, the slide gate being operably aligned by metering gate support guides, slidably movable by the retraction and extension of a metering cylinder.
6. The improved unit of Claim 1, the removable assembly further comprising a releasable securing assembly, which along with the sealing device, enables the hopper to be removed from the equipment leaving minimal to no residual material on the equipment requiring separate clean up.
7. The improved unit of Claim 6, the releasable securing assembly comprising a hopper tongue extending from the hopper, and a locking groove on the equipment into which the hopper tongue extends.
8. The improved unit of Claim 6, the releasable securing assembly comprising a release pin and retaining brackets on the equipment into which the release pin extends.
9. The improved unit of Claim 6, wherein the releasable securing assembly enables the hopper to be lifted off of the equipment vertically, without initially laterally sliding the hopper on the equipment to disengage the releasable securing assembly.
10. A gravimetric blender comprising:
 - (a) a material hopper having a neck, and
 - (b) a removable assembly enabling removability of the hopper from the blender, the removable assembly including a slide gate;

wherein the slide gate both regulates material flow rate from the hopper to the blender, and seals off the neck of the hopper during hopper removal from the blender.

11. The gravimetric blender of Claim 10, the slide gate being slidably movable by the retraction and extension of a metering cylinder.

12. The gravimetric blender of Claim 10, the removable assembly further comprising a releasable securing assembly, which along with the slide gate, enables the hopper to be removed from the blender leaving minimal to no residual material on the blender upon hopper removal.

13. The gravimetric blender of Claim 12, the releasable securing assembly comprising a hopper tongue extending from the hopper, and a locking groove on the blender into which the hopper tongue extends.

14. The gravimetric blender of Claim 12, the releasable securing assembly comprising a release pin, a hopper aperture and retaining bracket on the blender, the release pin extending through the hopper aperture and the retaining bracket.

15. The gravimetric blender of Claim 12, wherein the releasable securing assembly enables the hopper to be lifted off of the blender vertically, without initially laterally sliding the hopper relative to the blender to disengage the releasable securing assembly.

16. A method of dispensing material from a material hopper having a neck to equipment to which the material hopper dispenses material through the neck, the method comprising the following steps:

(a) regulating the material flow rate from the hopper to the equipment with a metering device until the hopper needs to be refilled with material;

(b) sealing off the neck of the hopper with the metering device;

(c) disengaging the hopper from the equipment without laterally sliding the hopper relative to the equipment;

(d) filling the hopper with material; and

(e) reengaging the hopper to the equipment.

17. The method according to Claim 16, wherein steps (a) and (b) are accomplished with a slide gate.

18. The method according to Claim 16, wherein step (c) of disengaging the hopper from the equipment is accomplished by removing a release pin from a hopper aperture and a retaining bracket on the equipment.

20250313 13:40:00